WHAT IS CLAIMED IS:

1   1.   A telecommunications system for improved session management within a data

2   cellular network, comprising:

3   a gateway one of a plurality of access networks, each of the plurality of access

4   networks being capable of being in wireless communication with a plurality of access terminals

5   to provide data connectivity between a packet switched data network and the plurality of access

6   terminals during respective data sessions associated with the plurality of access terminals, said

7   gateway access network serving a first subnet of the plurality of access networks and further

8   comprising:

9   means for receiving a session information request message from a target

10   one of the plurality of access networks within the first subnet, the session information request

11   message being sent to complete a dormant handoff of an ongoing one of the data sessions to the

12   target access network;

13   means for determining a second subnet that contains a source one of the

14   plurality of access networks associated with the ongoing data session; and

15   means for routing session information associated with the ongoing data

16   session from the source access network to the target access network.

1   2.   The system of Claim 1, wherein said gateway access network further comprises:

2   means for receiving an additional session information request message including

3 at least a previous Unicast Access Terminal Identifier assigned by an additional source access

4 network within the first subnet to an additional ongoing data session.

1   3.   The system of Claim 2, wherein said gateway access network further

2 comprises:

3   a list of currently assigned Unicast Access Terminal Identifiers within the first

4 subnet, each of the Unicast Access Terminal Identifiers including a field identifying an associated

5 one of the plurality of access terminals within the first subnet that assigned the respective one of

6 the Unicast Access Terminal Identifiers; and

7   means for matching the received previous Unicast Access Terminal Identifier with

8 one of the currently assigned Unicast Access Terminal Identifiers within the list to determine the

9 additional source access network.

1   4.   The system of Claim 2, wherein said gateway access network further comprises:

2   means for querying each of the plurality of access networks within the first subnet

3 with the previous Unicast Access Terminal Identifier to determine the additional source access

4 network.

1   5.   The system of Claim 1, wherein the session information request message includes

2   location data associated with the source access network, and wherein said means for determining

3   further comprises:

4   means for identifying an additional gateway access network within the second

5   subnet based on the location data.

1   6.   The system of Claim 5, wherein said means for identifying further comprises:

2   means for associating subnet geographical areas and gateway access network

3   identities; and

4   means for mapping the location data to one of the subnet geographical areas.

1   7.   The system of Claim 6, wherein the target access network receives the location

2   data in a Route Update message and sends the session information request message including the

3   location data to said gateway access network.

1   8.   The system of Claim 1, wherein said gateway access network further comprises:

2   means for receiving an additional session information request message including

3 location data associated with an additional source access network within the first subnet for an

4 additional ongoing data session; and

5   means for matching the received location data to the identity of the additional

6 source network.

1   9.   The system of Claim 1, wherein the session information request message includes

2 an identifier of the source access network, and wherein said means for determining further

3 comprises:

4   means for identifying an additional gateway access network within the second

5 subnet using the received identifier of the source access network.

1   10.   The system of Claim 9, wherein said means for identifying comprises:

2   a table listing gateway access network identities and associated source access

3 network identities; and

4   means for matching the received identifier of the source access network to one of

5 the source access network identities to determine the associated gateway access network identity

6 of the additional gateway access network.

1   11.   The system of Claim 10, wherein the target access network receives the identifier

2   of the source access network in a Route Update message or a Unicast Access Terminal Identifier

3   request message and sends the session information request message including the identifier of the

4   source access network to said gateway access network.

1   12.   The system of Claim 1, wherein said gateway access network further comprises:

2   means for receiving an additional session information request message including

3   an identifier associated with an additional source access network within the first subnet for an

4   additional ongoing data session; and

5   means for matching the received identifier to the identity of the additional source

6   network.

1   13.   The system of Claim 1, further comprising:

2   an additional gateway one of the plurality of access networks within the second

3   subnet, said additional gateway access network being configured to receive the session

4   information request message from said gateway access network within the first subnet, retrieve

5   the session information from the source access network and transmit the session information to

6   said gateway access network within the first subnet.

1 14. The system of Claim 13, wherein said additional gateway access network within

2 the second subnet and said gateway access network within the first subnet communicate using the

3 IPsec protocol.

1 15. A method for improved session management within a data cellular network having

2 a plurality of access networks, each of the plurality of access networks being capable of being in

3 wireless communication with a plurality of access terminals to provide data connectivity between

4 a packet switched data network and the plurality of access terminals during respective data

5 sessions associated with the plurality of access terminals, said comprising the steps of:

6 receiving a session information request message at a gateway one of the plurality

7 of access networks serving a first subnet of the plurality of access networks from a target one of

8 the plurality of access networks within the first subnet, the session information request message

9 being sent to complete a dormant handoff of an ongoing one of the data sessions to the target

10 access network;

11 determining a second subnet that contains a source one of the plurality of access

12 networks associated with the ongoing data session; and

13 routing session information associated with the ongoing data session from the

14 source access network to the target access network.

1   16.   The method of Claim 15, further comprising the step of:

2   receiving an additional session information request message including at least a

3   previous Unicast Access Terminal Identifier assigned by an additional source access network

4   within the first subnet to an additional ongoing data session.

1   17.   The method of Claim 16, further comprising the step of:

2   matching the received previous Unicast Access Terminal Identifier with one of a

3   plurality of currently assigned Unicast Access Terminal Identifiers within a list of currently

4   assigned Unicast Access Terminal Identifiers within the first subnet to determine the additional

5   source access network, each of the Unicast Access Terminal Identifiers including a field

6   identifying an associated one of the plurality of access terminals within the first subnet that

7   assigned the respective one of the Unicast Access Terminal Identifiers.

1   18.   The method of Claim 16, further comprising the step of:

2   querying each of the plurality of access networks within the first subnet with the

3   previous Unicast Access Terminal Identifier to determine the additional source access network.

1   19.   The method of Claim 15, wherein the session information request message includes

2   location data associated with the source access network, and wherein said step of determining

3   further comprises the step of:

4   identifying an additional gateway access network within the second subnet based

5   on the location data.

1   20.   The method of Claim 19, wherein said step of identifying further comprises the

2   steps of:

3   associating subnet geographical areas and gateway access network identities; and

4   mapping the location data to one of the subnet geographical areas.

1   21.   The method of Claim 20, further comprising the steps of:

2   receiving the location data at the target access network in a Route Update

3   message; and

4   sending the session information request message including the location data from

5   the target access network to said gateway access network.

1   22.   The method of Claim 15, further comprising the steps of:

2   receiving an additional session information request message including location data

3   associated with an additional source access network within the first subnet for an additional

4   ongoing data session; and

5   matching the received location data to the identity of the additional source

6   network.

1   23.   The method of Claim 15, wherein the session information request message

2   includes an identifier of the source access network, and wherein said step of determining further

3   comprises the step of:

4   identifying an additional gateway access network within the second subnet using

5   the received identifier of the source access network.

1   24.   The method of Claim 23, wherein said step of identifying further comprises the

2   step of:

3   matching the received identifier of the source access network to one of a plurality

4   of source access network identities listed in a table associating gateway access network identities

5   and source access network identities to determine the associated gateway access network identity

6   of the additional gateway access network.

1   25.   The method of Claim 24, further comprising the steps of:

2   receiving the identifier of the source access network at the target access network

3   in a Route Update message or a Unicast Access Terminal Identifier request message; and

4   sending the session information request message including the identifier of the

5   source access network to said gateway access network.

1   26.   The method of Claim 15, further comprising the steps of:

2   receiving an additional session information request message including an identifier

3   associated with an additional source access network within the first subnet for an additional

4   ongoing data session; and

5   matching the received identifier to the identity of the additional source network.

1   27.   A telecommunications system for improved session management within a data

2   cellular network, comprising:

3   a serving one of a plurality of access networks, each of the plurality of access

4   networks being capable of being in wireless communication with a plurality of access terminals

5   to provide data connectivity between a packet switched data network and the plurality of access

6   terminals during respective data sessions associated with the plurality of access terminals, said

7   serving access network being configured to negotiate an extended data session for a select one

8   of the plurality of access terminals across at least one additional one of the plurality of access

9   networks, said serving access network and said at least one additional access network assigning

10   a respective identifier for said extended data session and storing each said respective identifier

11   therein.

1   28.   The system of Claim 27, wherein said serving access network and said at least one

2   additional access network are located within an extended session area.

1   29.   The system of Claim 28, wherein said extended session area is operator-defined.

1   30.   The system of Claim 28, wherein said extended session area is defined by a mobile

2   subscriber associated with said select access terminal.

1   31.   The system of Claim 28, wherein said extended session area is defined based on

2   the location of said select access terminal.

1   32.   The system of Claim 27, wherein each of the plurality of access networks has an

2   extended session list therein containing a list of foreign identifiers assigned by other access

3   networks for extended data sessions, each of the foreign identifiers pointing to an associated local

4   identifier assigned by the respective access network for the respective extended data session.

1   33.   The system of Claim 32, wherein said at least one additional access network is

2   configured to perform a handoff of said extended data session associated with said select access

3   terminal from said serving access network to said at least one additional access network using said

4   identifier assigned by said serving access network to said extended data session.

1   34.   The system of Claim 33, wherein said at least one additional access network is

2   configured to match said received identifier associated with said serving access network with said

3   extended session list to determine said identifier assigned by said at least one additional access

4   network for said extended data session and activate said extended data session.

1   35.   The system of Claim 34, wherein said at least one additional access network is

2   further configured to send a session location update notification to said serving access network

3   to deactivate said extended data session in said serving access network.

1   36.   The system of Claim 27, wherein said respective identifiers assigned by said serving

2   access network and said at least one additional access network are Unicast Access Terminal

3   Identifiers, each of said Unicast Access Terminal Identifiers pointing to a respective session record

4   for said extended data session within said serving access network and said at least one additional

5   access network, said session record within said serving access network including protocols and

6   protocol configurations negotiated between said select access terminal and said serving access

7   network and said session record within said at least one additional access network including

8   protocols and protocol configurations negotiated between said serving access network and said

9   at least one additional access network.

1   37.   A method for improved session management within a data cellular network having

2   a plurality of access networks, each being capable of being in wireless communication with a

3   plurality of access terminals to provide data connectivity between a packet switched data network

4   and the plurality of access terminals during respective data sessions associated with the plurality

5   of access terminals, said method comprising the steps of:

6   negotiating, by a serving one of the plurality of access networks, an extended data

7   session for a select one of the plurality of access terminals across at least one additional one of

8   the plurality of access networks;

9   assigning, by said serving access network and said at least one additional access

10   network, a respective identifier for the extended data session; and

11   storing each said respective identifier for said extended data session within said

12   serving access network and said at least one additional access network.

1   38.   The method of Claim 37, wherein said step of storing further comprises the step

2   of:

3   storing said identifiers within an extended session list that contains a list of foreign

4   identifiers assigned by other access networks for extended data sessions, each of the foreign

5   identifiers pointing to an associated local identifier assigned by the respective access network for

6   the respective extended data session.

1   39.   The method of Claim 38, further comprising the step of:

2   performing a handoff of said extended data session associated with said select

3   access terminal from said serving access network to said at least one additional access network

4   using said identifier assigned by said serving access network to said extended data session.

1   40.   The method of Claim 39, wherein said step of performing further comprises the

2   step of:

3   matching said identifier associated with said serving access network received at

4   said at least one additional access network with said extended session list stored therein to

5   determine said identifier assigned by said at least one additional access network for the extended

6   data session and activate the extended data session.

1   41.   The method of Claim 40, wherein said step of performing further comprises the

2   step of:

3   sending a session location update notification from said at least one additional

4   access network to said serving access network to deactivate the extended data session in said

5   serving access network.

1   42.   The method of Claim 36, wherein said respective identifiers assigned by said

2   serving access network and said at least one additional access network are Unicast Access

3   Terminal Identifiers, each of said Unicast Access Terminal Identifiers pointing to a respective

4   session record for said extended data session within said serving access network and said at least

5   one additional access network, and wherein said step of negotiating further comprises the steps

6   of:

7   storing within said session record within said serving access network protocols and

8   protocol configurations negotiated between said select access terminal and said serving access

9   network; and

10   storing within said session record within said at least one additional access network

11   protocols and protocol configurations negotiated between said serving access network and said

12   at least one additional access network.